respectively) compared with HV (12 ± 4, 3 ± 3, and 1 ± 2 mm, respectively). No differences were noted in gastric volumes, GB volume, CCK concentration, and postprandial motility.

**Conclusions:** The fasting hypomotility noted in CD may be ascribed to the increased fasting GI peptides. An increase postprandial SBWC and postprandial symptoms has been observed in CD. We plan to replicate these pilot data in a larger cohort with the aim of identifying key biomarkers for pharmacological modulation to improve patient symptoms.

**References**

1. Menys A. Aberrant motility in unaffected small bowel is linked to inflammatory burden and patient symptoms in Crohn's disease. Inflamm. Bowel Dis., 2016;22:424–32.
2. Moran GW. Crohn's disease affecting the small bowel is associated with reduced appetite and elevated levels of circulating gut peptides. *Clin Nutrition*, 2013;32:404–11.

## P100

## Guanosine prevents nuclear factor-κB nuclear translocation ameliorating experimental colitis in rats

M.G. Zizzo[1,2]*, G. Caldara[3], A. Bellanca[2], D. Nuzzo[4], M. Di Carlo[4], R. Serio[1]

[1]*University of Palermo, Dipartimento di Scienze e Tecnologie Biologiche Chimiche e Farmaceutiche (STEBICEF), Palermo, Italy,* [2]*University of Palermo, Advanced Technologies Network (ATeN) Center, Palermo, Italy,* [3]*University of Palermo, Palermo, Italy,* [4]*Institute of Biomedicine and Molecular Immunology "Alberto Monroy" (IBIM), Consiglio Nazionale delle Ricerche (CNR), Palermo, Italy*

**Background:** inflammatory bowel diseases (IBDs), including Crohn's disease (CD) and ulcerative colitis (UC), are prevalent and debilitating health problems worldwide. Due to the adverse effects of classical treatment for IBD, therapeutic options and approaches for these diseases continue to evolve. Guanosine, a guanine-based purine, is an extracellular signalling molecule that seems to exert anti-inflammatory and antioxidative effects in several in vivo and in vitro injury models. The aim of the present study was to investigate whether exogenous guanosine may have protective effects on 2,4-dinitrobenzene sulfonic acid (DNBS)-induced Colitis in rat.

**Methods:** Experimental Colitis was induced by intrarectal administration of 0.25 ml of DNBS in 50% EtOH solution. After the induction of colitis animal received daily for 6 consecutive days i.p injection of guanosine (8 mg/kg). The effects of guanosine on DNBS-induced colitis were assessed by determination of body weight loss, stool consistency, colon weight/length, histological analysis, Furthermore the myeloperoxidase activity was biochemically evaluated and the mRNA expression of pro-inflammatory cytokines was detected by real-time quantitative reverse transcription PCR (qRT-PCR). In addition, nuclear factor-κB (NF-κB) p65 protein expression levels in colon tissues was investigated using Western blotting and markers of oxidative and nitrosative stress were detected.

**Results:** Inflammation in DNBS-rat is characterised by symptoms of losing body weight, loose feces/watery diarrhoea, leukocyte infiltration upregulation of proinflammatory cytokines, oxidative and nitrosative stress. Treatment with guanosine (8 mg/kg) significantly ameliorated the severity of DNBS-induced colitis as evidenced by the reduction in body weight loss and in diarrhoea. Guanosine also prevented the macroscopic and microscopic damage to the colonic mucosa, and the increase in myeloperoxidase activity induced by DNBS. Furthermore, the guanosine treated colitis rats also exhibited a lower mRNA level of pro-inflammatory cytokines, namely interleukin-1β , interleukin-6 and tumour necrosis factor-α. Importantly, the ameliorative effect of guanosine was related to an inhibition of the NF-κB signalling pathway by downregulating the expression levels of NF-κB p-65, and to a reduction of DNBS increased levels of reactive oxygen species and nitrite.

**Conclusions:** Overall these results indicate that guanosine is able to alleviate colonic inflammation in DNBS- rats mainly by down-regulation of the NF-κB signalling pathway and of the production of anti-inflammatory cytokines, reactive oxygen species and nitrite. Further studies are encouraging for disclosure guanosine as a novel drug candidate for the treatment of colonic inflammation.

## P101

## Innate immunity and Crohn's disease recurrence after surgery

L. Saadeh[1]*, I. Angriman[1], A. Kotsafti[2], C. Mescoli[3], T. Odorizzi[1], M. Scarpa[2], F. Cavallin[2], M. Rugge[4], R. Bardini[1], I. Castagliuolo[5], M. Scarpa[2]

[1]*University of Padova, Department of Surgery, Oncology and Gastroenterology, Padova, Italy,* [2]*IRCCS IOV Istituto Oncologico Veneto, Padova, Italy,* [3]*Azienda Ospedaliera - Università di Padova, Padova, Italy,* [4]*University of Padova, Department of Medicine, Padova, Italy,* [5]*University of Padova, Department of Molecular Medicine, Padova, Italy*

**Background:** Crohn Disease (CD) is a chronic inflammatory disease affecting the gastrointestinal tract with a patchy and transmural involvement. CD complications or unresponsiveness to medical therapy are managed with surgery but recurrence rate is high and burdensome. Re-operation is often required because of the fibrotic stenosis of the anastomosis. This study aims to analyse the relationship between innate immunity mediators and ileal wall fibrosis and to define possible molecular predictors of clinical and endoscopic recurrence.

**Methods:** Mucosal samples were obtained from both healthy and inflamed ileum of 56 consecutive patients undergoing ileo-colonic resection for CD. Ileal mucosal samples of 14 patients undergoing surgery for cancer were obtained as control tissues. Data on clinical, endoscopic, and surgical follow-up were collected. Clinical recurrence has been defined as HBI≥8 (moderate-to-severe activity) while endoscopic recurrence has been defined as Rutgeerts's score ≥3. A pathologist evaluated the fibrosis grade with a specific score. CD68, CD163 and iNOS expression was evaluated with immunohistochemistry through a semi-quantitative scale. TLR2, TLR4, TLR5, HBD1, HBD2, HBD3, HD5, and HD6 mRNA expression was quantified through RT-PCR. Concentrations of BDNF, Eotaxin-1, ICAM-1, IL-1β, IL-1alpha, IL-1ra, IL-12p40, IL-12p70, IL-15, IL-17, IL-23, MMP-3, SCF, VEGF were determined with ELISA. Statistical analysis was carried out with non-parametric tests.

**Results:** Fibrosis grade showed a direct correlation with IL-17 concentration ($r$ = 0.37; $p$ = 0.04) and inverse correlation with HBD1 ($r$ = -0.34; $p$ = 0.01), TLR4 ($r$ = -0.41; $p$ < 0.01), and IL-12p70 ($r$ = -0.37; $p$ = 0.01) levels. HBD1 and TLR4 accurately indicated severe fibrosis (AUC 68%; $p$ = 0.02 e AUC 72%; $p$ < 0.01 respectively). During the follow-up, 30% of patients (17/56) developed moderate-to-severe clinical recurrence, while 21% of the patients (12/56)